

**In the Claims:**

1. (Currently Amended) A computerized method for determining a complex computer operation for a computer application, comprising the steps of:  
~~generating a data flow graph representing the computer application;~~  
~~generating a plurality of sub-graphs of said data flow graph, wherein each of said sub-graphs represents a basic block of said computer application;~~  
~~(a) traversing generating a tree of potential complex computer operations, wherein each of said potential complex computer operations represents one or more of said sub-graphs; and~~  
~~(b) pruning the tree for optimality under constraints.~~
2. (Original) The method of claim 1, wherein optimality comprises maximization of a function of merit.
3. (Original) The method of claim 1, wherein the constraints comprise a convexity constraint.
4. (Original) The method of claim 1, wherein the constraints comprise a maximum-input-multiplicity constraint
5. (Original) The method of claim 1, wherein the constraints comprise a maximum-output-multiplicity constraint.
6. (Original) The method of claim 1, wherein pruning is effected when a connectivity constraint is violated.
7. (Original) The method of claim 1, wherein pruning is effected when a connectivity constraint is violated and gain towards optimality of the maximal connected graph is bounded.

8. (Currently Amended) A system for determining a complex computer operation for a computer application, comprising:

computer means for generating a data flow graph representing the computer application;

computer means for generating a plurality of sub-graphs of said data flow graph, wherein each of said sub-graphs represents a basic block of said computer application;

(a) system computer means for traversing a tree of potential complex computer operations; and

(b) system computer means for pruning the tree for optimality under constraints.

9. (Currently Amended) The system of claim 8, wherein the computer means for pruning comprises system means for maximization of a function of merit of a cut of the tree.

10. (Currently Amended) The system of claim 8, wherein the computer means for pruning comprises system means for enforcing a convexity constraint.

11. (Currently Amended) The system of claim 8, wherein the computer means for pruning comprises system means for enforcing a maximum-input-multiplicity constraint.

12. (Currently Amended) The system of claim 8, wherein the computer means for pruning comprises system means for enforcing a maximum-output-multiplicity constraint.

13. (Currently Amended) The system of claim 8, wherein the computer means for pruning comprises system computer means for pruning when a connectivity constraint is violated.

14. (Currently Amended) The system of claim 8, wherein the computer means for pruning comprises system computer means for pruning when a connectivity constraint is violated and gain towards optimality of the maximal connected graph is bounded.